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GUERILLA MEDICINE

AN INTRODUCTION TO THE CONCEPT OF AUSTERE MEDICINE IN ASYMMETRIC CONFLICTS

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Guerilla Medicine: An introduction to the concepts of austere medicine in asymmetric conflicts

A project by European Medics

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SYNOPSIS

On today's rapidly evolving battlefields, a steady supply chain and available medical assets can not be taken for granted anymore. Advancing enemy capabilities and evolving threats are quickly becoming a limiting factor in national defense strategies.

With countries employing new concepts for improving their national defense against near-peer and superior adversaries, the use of nationally authorized resistance organizations is becoming more and more prevalent on a global scale.

State-authorized resistance efforts have to be supported by elaborate medical structures in order to remain operational and capable.

This publication provides an introduction to the topic of medical support to resistance forces provided by irregular medical services in environments of armed conflict, their structure, functioning methodologies as well as personnel and equipment considerations.

THE CURRENT STATE OF BATTLEFIELD MEDICINE

In a modern world, government entities are the driving force behind military operations around the globe. National armies are currently conducting the majority of combat operations worldwide.

However, when thinking about modern conflicts, insurgencies and guerilla warfare have played a crucial part in delaying and undermining the efforts of a sometimes overwhelmingly powerful opposing force. Demoralizing, lowering the enemies morale as well as depleting enemy supplies through ambushes, sabotage and intelligence gathering for national forces is a key strength of resistance operations.

During the War on Terror many concepts of battlefield medicine were utilized and improved to enhance the likelihood of casualties surviving injuries. One of those was the use of specialized medical assets and a system of medical care divided into multiple levels in accordance with their capabilities.

When a soldier gets injured on the battlefield, it is usually himself or his fellow soldier that provides initial treatment at the point of injury. After that, a medical provider gives further treatment in the field and hands the patient over to aeromedical

evacuation assets that have medically trained personnel on board, capable of providing en-route care to the casualty. After definitive stabilization the casualty is then transported to large clinical facilities such as Landstuhl Regional Medical Center (LRMC) or other facilities in the patient's countries of origin for further treatment or rehabilitation.

THE CHALLENGES

The current chain of medical care is highly dependent on a few factors to be effective:

1. At the moment NATO armed forces enjoy total air superiority in most of the CENTCOM area of responsibility, which allows soldiers to be evacuated by aeromedical assets at any point in time, may the need arise.
2. Armed forces are capable of setting up larger clinical facilities near the battlespace that are capable of providing necessary treatment. The evacuation time is usually relatively short due to policies requiring transport times dictated by the "Golden Hour" concept.
3. Medical capabilities usually exceed the current "demands", both in terms of equipment quality and capacities.

In future conflicts that will likely involve a near-peer adversary with more developed anti-air capabilities than current insurgents have at their disposal, an armed force will no longer be able to guarantee timely aeromedical evacuation. Increased enemy capabilities could not only increase aeromedical evacuation time, evacuation might just be unavailable altogether. Further, a near-peer adversary could deny national forces freedom of movement through other operational domains. Another factor is that medical capabilities of military forces will likely be exhausted by military casualties, as there will likely be much more casualties than in irregular conflicts against ill-equipped insurgent forces nowadays. Military medical systems might not have enough resources to support civilian or non-government initiatives through medical support.

THE RESISTANCE OPERATING CONCEPT (ROC)

In response to geopolitical and strategic developments, NATO leadership has identified the need for a broader spectrum of national defense strategies against a partial or full loss of national sovereignty. This scenario requires nations to respond with a "Total Defense" that includes the use of state-authorized resistance efforts in order to undermine and weaken an opposing force. This concept includes the premise that national defense can greatly benefit from state-authorized irregular forces such as militias and other state-led irregular efforts to restore and maintain stability in their respective areas of operations. [1]

There are two key factors defining the qualities of a population in relation to total defense. Both have significant implications on the nation's ability to regain and maintain sovereignty as well as deter an opposing force: The first factor is resilience. It can be described as the durability of a society as well as its ability to tolerate hardship resulting from enemy action in order to achieve it's political, tactical and strategic goals. The second factor is resistance. Resistance comprises those factors that can be employed by a nation when faced with an opposing force to regain their national sovereignty. The components of this factor can range from political, diplomatic and historical relations as well as geographical location and accessibility as well as government and civil defense capabilities. It is important to

note that resistance includes the full spectrum of national capabilities, both initiatives of governmental and private origin. These private initiatives to regain national sovereignty require legal authorization from the legally established national government.

A highly resistant and resilient nation will have a highly increased potential for maintaining or regaining its national sovereignty in the face of an armed attack. A national defense strategy that includes the Resistance Operating Concept must integrate all national assets into the defense of the nation, to include legal, diplomatic, economic, and logistical aspects. A fully integrated multi-domain defense strategy can potentially deter an opposing force just by presenting the enemy's cost and effort necessary to gain relevant strategic advantages in the attacked nation as exceedingly high.

Aspects of a full spectrum defense strategy include military and civil defense. Both of these forces can employ assets designed to operate in enemy-controlled areas in order to gain and maintain control in those areas through resistance efforts. In a scenario where the concept of “Total Defense” comes into action (eg. an armed invasion by a foreign nation), both civil defense and military assets have distinct roles in the process of defense of the nation.

The military forces mission is to defend, maintain and regain national sovereignty and territorial integrity through achieving military victories as well as deterrence of attacks through maintaining readiness and effectiveness of the force. Further, military assets are tasked with establishing and maintaining readiness of national resistance forces and providing military assistance to those forces through stay-behind units and advisorship during times of occupation.

Civil defense forces on the other hand, are tasked with maintaining the functionality of the nation through upholding of public service functionality, establishment of assets such as fire services, local law enforcement and medical services as well as support of national military through establishment of armed national defense organizations.

THE STRUCTURE OF RESISTANCE

A state-authorized and legally recognized defense effort is divided into multiple subgroups that work together in order to maximize effectiveness and flexibility of the force. In order to understand the role of the resistance medical service it is imperative to understand at which position in the resistance effort this medical service resides structurally and which other organizational divisions within the resistance effort it interacts with. The resistance is divided into multiple main components: the guerilla, the auxiliary forces, the underground and the public component. [1,2] Medical Support to the guerilla forces is involved in a variety of operations and components of the resistance structure. To provide adequate medical support to the resistance, medical assets must be specifically tailored to the missions that this specific resistance component is assigned to.

The guerilla component is the main strike force of the resistance movement and consists of members of the civilian population as well as armed forces members designated to support guerilla operations. The missions conducted by the guerilla component are usually direct action and reconnaissance, such as ambushes, raids, demolition missions, sabotage of vital enemy equipment and

attrition of supplies through continuous, low-risk interactions which also leads to lowering of enemy morale and cohesion. Due to the nature of their missions, guerilla components tend to be in need of personnel capable of providing acute medical care at the point of injury. Individuals trained in Tactical Combat Casualty Care (TCCC) procedures at the TCCC Tier 1 skill level, as well as Tier 2-trained personnel will be able to handle the majority of point-of-injury care. Further care can be provided by Tier 3 providers, also known as Guerilla Medics.

The Underground component is usually a non-combatant element that is supporting guerilla operations through intelligence gathering, active counterintelligence efforts, information dissemination and communications, logistical support of the force through procuring and manufacturing supplies, tools and equipment as well as conducting sabotage and non-violent resistance operations. This is also usually the main center of gravity in terms of more extensive medical support. The Underground supports the majority of resistance medical operations such as casualty collection points, handles most medical evacuation assets (MEDEVAC), provides advanced medical interventions such as surgical care and rehabilitation as well as recruits, trains and provides specialized personnel for resistance operations. Manufacturing and acquisition of medical supplies is also a key function of the Underground component.

The third component of the resistance structure is the Auxiliary. This component is usually not heavily involved in resistance operations and members usually perform specific tasks in support of the force, without being involved in the larger operating spectrum. Their information is limited to a “need-to-know” principle in order to increase compartmentalization of information and lower the risk of information leaks. Missions of the Auxiliary include intelligence collection and sentinel functions for early warning, logistics and transport of goods within the operating area, acquisition of supplies, management of structures used by the resistance and other maintenance tasks. Auxiliary components usually do not participate directly in medical operations. They support Underground and Guerilla components through sourcing and transporting resources and medical supplies, collecting information on supply status in local clinics, transporting personnel and maintaining clandestine medical facilities at a state of readiness.

The public component is the fourth division of the resistance forces. It is not always present inside of the occupied territory and depends on the tolerance of the occupying force. The purpose of this component is to politically represent the resistance effort and support it’s actions and operations through legislative and diplomatic efforts. It can manifest in an oppositional political party, if present in the occupied nation, or as a spokesperson selected by the resistance leadership. This component can become increasingly compromised and might even need to relocate to other territories in order to maintain operational freedom and provide consistent support to the resistance effort. The public component supports the medical aspect of the resistance through diplomatic and legislative efforts as well as being in contact with human rights organizations, representing the best interests of the resistance force in the public perception and international relations. Also, diplomatic relations to foreign are a vital aspect for generating support for the attacked nation which can range from military and civil defense

support to economic, legal and logistical support .

MEDICINE ON DEMAND

Resistance forces participating in operations against an opposing force are very likely not able to operate from a safe area at the rear end of the battlespace, as all of their operations are taking place in enemy-controlled territory. This means that constructing large-scale clinical facilities would lead to vulnerability of the guerilla forces, which heavily relies on secrecy and covertness to conduct their operations in enemy-controlled territory without being detected and traced by enemy intelligence gathering assets.

As nations and armed forces face new threats, old linear evacuation models (from the combat zone to the clinic, then to a rehab center) applied in environments with air superiority and total freedom of movement might no longer be feasible for an irregular force in a near-peer conflict. What needs to be explored is the possibility of a cyclic model of care, in which the friendly guerilla fighter is evacuated from immediate enemy pressure, is stabilized inside of the area of operations and is then rehabilitated or relocated for further treatment outside of the enemy-controlled area if possible.

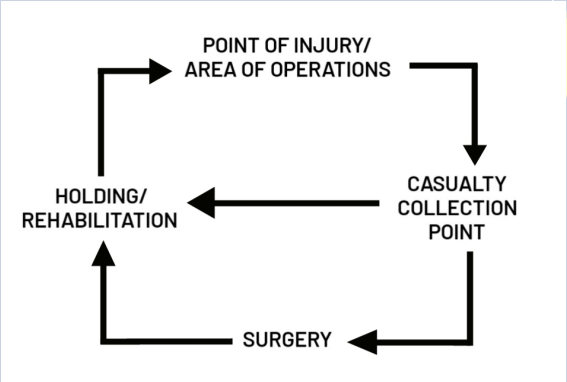

Figure 1: The Cyclic Model of Care

Since military medical assets will largely be unavailable or not feasible to be used by resistance forces, civilian medical capabilities or organic assets of the irregular forces will be the epicenter of medical care for the insurgents in the area of operations.[3]

A cyclic model of care, in which the guerilla fighter is evacuated from immediate enemy pressure, is stabilized and receives treatment inside the area of operations needs to become a central point of planning irregular force operations and medical considerations. As medical providers will likely be low in numbers during times of conflict, it is highly probable that the demand placed on the providers by the amount of casualties as well as the intensity of their injuries, will exhaust medical capabilities very rapidly. This indicates that the availability of conventional medical assets to support guerilla force operations 24/7 will not be sustainable. Also, fixed medical sites would be a vulnerable target for enemy strikes and surveillance operations. Mobility, flexibility and low visibility would need to be the priority of medical teams in order to enhance their survivability. To circumvent that problem, medical support to friendly irregular forces would have to be set up just before a planned guerilla operation and then immediately be dismantled after such an operation has been conducted. This would require coordination and information exchange with the specific guerilla elements.

“WHOLE OF SOCIETY” APPROACH

In cases of armed conflict a nation can expect a large disproportion between the large number of casualties and the few medical providers. US Special Operations Command Europe (SOCEUR) conducted various exercises in Eastern Europe and

concluded that the current metric for establishing SOF medical support for friendly guerilla forces is neither feasible nor survivable. A series of concepts originated from these exercises, one of them being the “whole of society” approach to medical care. It includes the premise that every individual in society becomes an asset to the guerilla forces and fellow civilians in times of conflict.

To enable patient survival until a medic or entry-level provider can reach the injured guerilla fighter, bystanders and teammates must be capable of providing immediate life support and assist in rescue efforts. This means that every able-bodied individual willing to support friendly guerilla forces in times of conflict should train and stay proficient in providing tactical casualty care and have the necessary equipment to perform the associated procedures.
These skills should be trained and assessed under the supervision of a qualified instructor.

The implementation of Tactical Combat Casualty Care in armed forces around the world has had a significant impact on casualty mortality. To enhance the chances of survival, all resistance personnel should be trained in basic TCCC procedures in accordance with latest recommendations and clinical evidence. Appendix 1 contains a list with recommended capabilities for all service members of the Guerilla Force.

Organic medical assets of the guerilla force will very likely be limited to providers at the TCCC Tier 2 Level (eg. Combat Lifesavers) without institutional medical training. The role of Advanced Guerilla First Responders (AGFR) would be to provide robust and effective immediate care to casualties, providing basic en-route care until the casualty can be handed over to a casualty collection point and assist the medical professionals at the CCP with providing advanced care. Further, AGFRs can provide a limited degree of primary care in the field to limit the necessity of frequent evacuation due to minor illnesses and injuries. Limited use of Tier 3 Providers is possible, however this specially trained personnel is valuable and not likely to be employed at the point of injury in high-risk missions a guerilla unit would face.

More advanced care would be provided by medically trained personnel at the CCP. There, the casualties would be triaged and then evacuated to the appropriate assets like surgical teams or so-called holding teams. Rapid transport away from the CCP could decrease detection and prevent overloading with casualties, exceeding its capabilities.

The triaged and stabilized casualties would then either arrive at forward surgical teams or at holding teams that would provide longer-term care to casualties after surgery or those casualties that do not require surgery. Multiple underground surgical teams should be distributed throughout the area of operations in order to make tracking the flow of casualties to the clinical sites more difficult for the enemy. Specializations of surgical teams based on provider training level and available equipment could further increase casualty flow as well as ease of access to specialized medical care without the need of establishing large scale medical facilities compromising the necessary low detectability. It would also decrease the waiting times for the incoming patients.

THE GUERILLA MEDIC

The backbone of resistance pre-clinical medical capabilities is the Guerilla Medic. This medical provider can be categorized

as a TCCC Tier 3 Provider (Combat Medic/Corpsman). The Guerilla Medic role is best filled by a professionally trained medical provider such as EMS personnel (EMT/AEMT/Paramedic) that is trained in tactical medical procedures and capable of providing treatment in a tactical context. The Tier 3 Provider is responsible for most of the medical treatment of immediate care such as advanced cardiac life support, management of internistic pathologies, detection and management of acute psychological and mental health emergencies as well as management of pathologies resulting from environmental factors such as cold and heat injuries.

Further, the Guerilla Medic needs to be capable of sustaining a casualty for prolonged periods of time in case of delayed evacuation.[4] Also, he acts as a link to higher-level providers such as clinical staff and may assist in or perform advanced procedures under guidance of a clinician certified in those procedures. For that reason it is essential that the Guerilla Medic is proficient in Prolonged Casualty Care techniques including fundamental nursing care. Synchronization training and further skill development are needed to integrate the skillset of the Guerilla Medic into the whole complex of resistance medical operations. Nations preparing for implementation of resistance medical services may allocate resources and personnel to fill these slots in times of conflict or provide support to resistance organizations involved in such operations.

Another key mission of the guerilla medic is to train others in medical practices and therefore becoming a force multiplier to his unit and his community. Training new medical providers not only increases the resilience and resistance of the force, it can also be used as a way to enhance sympathy with the general population.

It is essential that the guerilla medic and his logistical and intelligence gathering assets have a thorough understanding of the operating area. This enables the resistance assets to locate and acquire resources, either from factories producing medical equipment, hospitals, local clinics, nursing homes and even enemy supply lines. Production and manufacturing of medical gear from readily available materials by the resistance support elements is also a key component of gear acquisition. Information and guides on how to manufacture improvised medical supplies should be gathered in advance of any operations.

A key aspect of preparation is the theoretical aspect. The guerilla medic has to be a confident and most importantly competent provider that can operate independently within his scope of practice and assist with procedures at a higher level of care. It is highly recommended that every provider acquires manuals, handbooks and reference material necessary to gather information when internet access, communication and electricity might not be available.

THE GUERILLA CLINIC

Large-scale clinical facilities and regular medical support are usually a rare luxury in areas of prolonged conflict. Detectability, the amount of resources required and lack of mobility make this kind of structure very vulnerable in a conflict environment. To provide friendly guerilla forces with adequate medical support, underground field clinics and improvised surgical facilities will have to be distributed throughout the area of operations and manned by adequately trained medical personnel. Those facilities have to be located in an area far enough from the guerilla's targets and objectives

to remain relatively safe and concealed, as well as close enough to allow speedy access and flow-through of guerilla medical evacuation (MEDEVAC) assets.

Lessons learned from resistance movements in Nazi-occupied Poland during the Second World War show that underground structures as well as abandoned residential buildings were often used, as they offered protection from observers, indirect fires and aerial surveillance as well as aided in maintaining light discipline and hiding other indicators of presence. It is important to mention that the exact setup of a guerilla clinic will highly depend on what capabilities it intends to offer. Size, environmental factors, supplies available, electricity and other factors will play a key role in determining setup. A basic floor plan for a clinic offering scalability to the desired capacities and capabilities is attached in Appendix 2.

The United States Special Operations Command Europe (SOCEUR) determined that conventional forward surgical capabilities are prone to having a high vulnerability and low survivability due to the fixed nature and low mobility once deployed. It is essential that resistance forces and support elements are highly mobile and agile, in order to adequately evade advancing enemy forces once detected. Underground Surgical Facilities require significant logistical support as well as highly trained medical personnel in order to operate efficiently. Transport, logistics and communication as well as command and control structures should be developed well in advance of any operational deployment of medical assets.

Underground Surgical Facilities (USF) are divided into Underground Surgical Teams and Underground Resuscitative Teams, mirroring the structure utilized by US Army's Forward Resuscitative and Surgical Teams.[5] The mission of Underground Surgical Teams is to provide specific trauma surgical treatment in order to enhance survivability of resistance forces, such as laparotomies, thoracotomies, insertion of vascular shunts, amputations, fasciotomies and other emergency surgical procedures applicable to a resistance setting. Underground Resuscitative Teams have the purpose of providing Damage Control Resuscitation to mitigate the physiological effects of hemorrhage resulting from trauma. The implementation of Damage Control Resuscitation has shown great benefit in a military context.[6] Methods employed range from advanced hemorrhage control techniques over fluid resuscitation with blood products to point-of-care laboratory diagnostics. These two elements can be employed in conjunction with each other or as separate elements in accordance with the commander's intent and mission requirements.

The Underground Holding and Rehabilitation Facility is a concept especially well suited for resistance operations due to its ability to provide patient care in enemy-controlled territory without the need for large facilities.
While Underground Surgical Facilities are usually located close to Guerilla operating areas, holding facilities do not require this degree of geographical proximity. The purpose of the Underground Holding Clinic is to receive patients that have been injured and do not require surgery due to the low severity of their injuries as well as patients that have undergone surgery and are not in a condition that allows for discharge of patients as well as to prepare those patients for rehabilitation and home-based treatment if necessary. Depending on the desired capacity and capabilities, these clinics should be staffed

by personnel capable of providing long term care such as nurses, physio-therapists, physicians and even volunteers trained and/or experienced in patient care.

EQUIPMENT

In order to provide adequate medical care, providers are highly dependent on the availability of medical equipment and expendable supplies. The best provider can not apply his knowledge if he has no tools to do so. However, conflicts around the world have shown that the availability of medical equipment is usually limited by distribution difficulties and general lack of equipment in the area of operations of the resistance force. It is therefore imperative that the guerilla medic prepares himself for the possibility of equipment shortages and establishes a plan for circumventing those shortages in cooperation with his support network.

Basic expendable gear necessary for immediate treatment of trauma casualties such as tourniquets, gauze and other disposables like blankets can be spread out throughout as they do not require advanced medical personnel to be used effectively. Every member of the guerilla unit should have and carry a fully stocked Individual First Aid Kit (IFAK) to be able to provide self-aid and buddy-aid.

Advanced Gear such as intubation equipment, medications, fluids, surgical equipment and diagnostic tools should be stored with medical personnel or in a central location for immediate access, once medical assets get activated. Gear caches spread out throughout the area of operations are one option to achieve gear accessibility without having to carry large amounts of supplies that could be lost, confiscated or damaged during operations and transport. These cache locations have to be identified and assessed prior to the activation of the medical assets to allow for smooth operations. Since advanced medical equipment can pose a significant financial burden on private organizations and individuals, methods of funding such equipment through third parties such as organizations affiliated with the resistance effort and the national defense complex are to be considered. In areas where government or third party aid is not available, efforts should be undertaken to fund this type of equipment through crowdfunding and sharing costs. The general population is oftentimes willing to support medical efforts independently from resistance organizations. It might be necessary to create an overt or covert local medical organization that provides treatment to the general population, not only to resistance forces, in order to gain public approval and support, as well as funding.

INDIVIDUAL GEAR

The implementation of Tactical Combat Casualty Care in armed forces around the world has had a significant impact on the reduction of preventable death on the battlefield.[7] To be able to provide adequate treatment, standardized and readily available individual medical equipment is necessary. Every member involved in resistance operations should own and be proficient with the use of the Individual First Aid Kit (IFAK) to be able to adequately provide necessary medical treatment in accordance with the latest TCCC recommendations and recognized best practice standards. An exemplary equipment list for an Individual First Aid Kit (IFAK) is available in Appendix 3.

Since injured casualties are very rarely in a condition to perform advanced procedures such as airway management and thoracic trauma management on themselves, use of the IFAK supplies by

the casualty in an attempt to manage the initial injury can result in less-than-optimal treatment effectiveness. Further, any subsequent treatment provider attempting to provide casualty care based on the supplies available in the casualties IFAK will have insufficient equipment available, since the items in the IFAK will already have been used by the casualty with likely insufficient results, could possibly be displaced by the casualty through spillin of items or be rendered less effective by environmental factors. A proven solution to this problem is the dual-phase IFAK approach. This concept for setup of IFAKs is based on the premise that the kit is divided into a self-aid section that is carried in the immediate reach of the individual and a buddy-aid section that is usually carried on the individual's load-bearing equipment (LBE) or plate carrier.

The self-aid section of the IFAK is for the individual to apply on himself and is to be carried preferably in a separate pouch from the rest of the IFAK. It can be stored on the belt or other first line equipment such as clothing pockets and contains equipment that can realistically be applied by an injured patient by himself, such as tourniquets, basic bleeding control equipment and signaling devices for alerting other rescuers. The purpose of this kit is to create an easily available set of tools that can realistically be employed by a conscious casualty to manage the results of combat trauma. It also creates supply redundancy and therefore increases the overall medical capabilities of the unit. It is important to understand that this kit does not seek to replace the traditional IFAK which is commonly used by armed forces around the world so far. It seeks to expand this concept and allow for a clearer treatment process and easier access to necessary supplies during treatment.

The buddy-aid section of the IFAK is to be used by a first aid provider treating the casualty on the casualty itself. By using the casualties own IFAK to treat said casualty, the consistent availability of basic supplies throughout the whole unit is guaranteed and the first aid provider is not exploiting his own supplies to provide aid. The buddy aid section of the IFAK is larger in size and more comprehensive than the self aid kit. It contains all items that are commonly associated with regular IFAKs.

The next level of care is provided by the Advanced Guerilla First Responders (AGFR) which is representing the TCCC Tier 2 Provider. Since the AGFR is likely to be the only organic asset of the Guerilla force at squad level or similar sized units, the AGFR has to provide reliable trauma management and be able to sustain those patients as well as treat patients with minor injuries and illnesses associated with tactical operations, such as orthopedic, neurological and environmental conditions. Appendix 4 provides a more detailed look at the capabilities of the AGFR scope of practice. To address these needs, the AGFR needs a certain set of equipment that will be capable of providing adequate treatment capabilities in conjunction with the supplies carried in the patient's IFAK. It is important to remember that the majority of trauma medical treatments provided by the AGFR will be based on the patient's IFAK, whereas the AGFR-specific gear will broaden that spectrum to increase capabilities. An exemplary minimum packing list of equipment for the AGFR is included in Appendix 5.

The next level of care is provided by the Guerilla Medic (TCCC Tier 3). Factors like the scope of practice of this provider as well as the mission, environmental factors, evacuation time and assistance from other members of the team requires an

extended amount and variety of equipment. Although the exact specifics of the packing of a typical Medic Bag is highly individual, a suggested packing list is attached in Appendix 6. In order to enhance the general capabilities of the resistance units and to avoid overloading the medic with equipment it is recommended to spread basic supplies such as bandages and tourniquets throughout the unit in the form of IFAKs as described previously. Further, the medic should make an effort to spread his equipment throughout his personal lines of gear in order to make the items necessary for first-line treatment easily accessible without the need to remove the medical backpack. Concepts such as the “MARCH Belt” or use of waist packs and chest rigs for medical purposes should be evaluated on an individual basis.

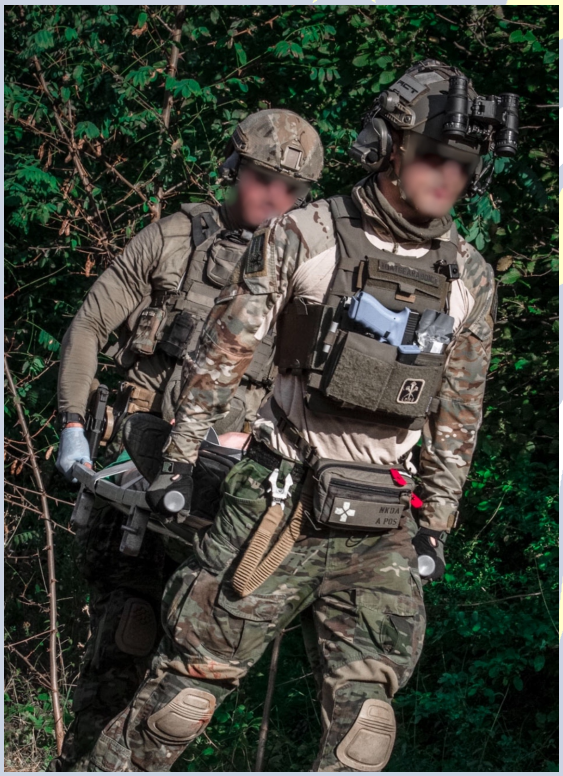

Figure 3: Use of a waist bag as part of the individual medical equipment. (Picture provided by @thatgearaddict and @opcon_germany)

CONCLUSION

To increase readiness and effectiveness of the resistance medical forces a national and private emphasis should be placed on organizing, training, equipping and maintaining such an organization and it’s support system.

Active support by governmental bodies through legislation, financing, diplomatic representation, logistic support and personnel can greatly increase effectiveness of resistance efforts and therefore increase national defense readiness, aiding in deterrence of foreign adversaries.

Training and educating the whole of society in the matters of national defense, individual and collective responsibilities relating to it as well as medical training at all levels of capability is essential in the quick establishment of resistance medical forces during times of conflict or even occupation.

The subject of providing medical support in environments of asymmetric conflicts is highly complex and places a great amount of stress on all aspects of these operations. Through extensive planning, preparation and coordination in all areas of relevance however, it is possible to create systems and mechanisms to provide care in those difficult environments and support a resistance force effectively. **EURMED**

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APPENDIX 1 - MEDICAL SKILLS FOR ALL SERVICE MEMBERS

These skills should be trained and maintained by all personnel related to the Guerilla force, whether in operational or support roles. Training should be conducted by qualified and skilled instructors and retaken periodically in order to maintain capabilities. The recommendations follow the MARCH algorithm for acute treatment and the E-PAWS-B algorithm for extended care. If training time is insufficient, didactic focus should be placed on the MARCH algorithm.

MARCH ALGORITHM

Massive Bleeding Control
- Direct pressure application
- Tourniquet application
- Wound packing
- Bandaging

Airway Management
- Airway status assessment
- Recovery position
- Head tilt/chin lift maneuver
- Jaw Thrust Maneuver
- Sit up/Lean forward position
- Nasopharyngeal Airway Insertion

Respiratory Management
- Respiratory status assessment
- Identification of Pneumothorax
- Chest Seal Application
- Chest Seal Tension Release Maneuver

Circulation
- Circulation Assessment (Heart Rate, Blood pressure, Capillary refill time)
- Identification of hemorrhagic shock
- Giving PO fluids and ORS Solution

Hypothermia Management
- Determining Hypothermia Level
- Active warming methods
- Passive warming methods

E-PAWS-B ALGORITHM

Eye Injuries
- Assess eye injuries
- Eye shield application

Pain Control + Antibiotics
- Provide PO analgesics
- Provide PO antibiotics

Wounds
- Assess wound condition
- Debride wound (non-surgical)
- Apply and change dressings

Splinting
- Identify musculoskeletal injuries
- Apply splinting

Burns
- Identification of degree of burn
- Identification of total affected body surface area
- Application of sterile dressing

Administration
- Perform a MEDEVAC request
- Fill in a TCCC patient card
- Monitor and trend vital signs

APPENDIX 2 - UNDERGROUND GUERILLA CLINIC FLOOR PLAN

The setup presented here is an exemplary presentation that requires adaptation to the specific mission requirements, environmental factors and desired capabilities of the clinic.

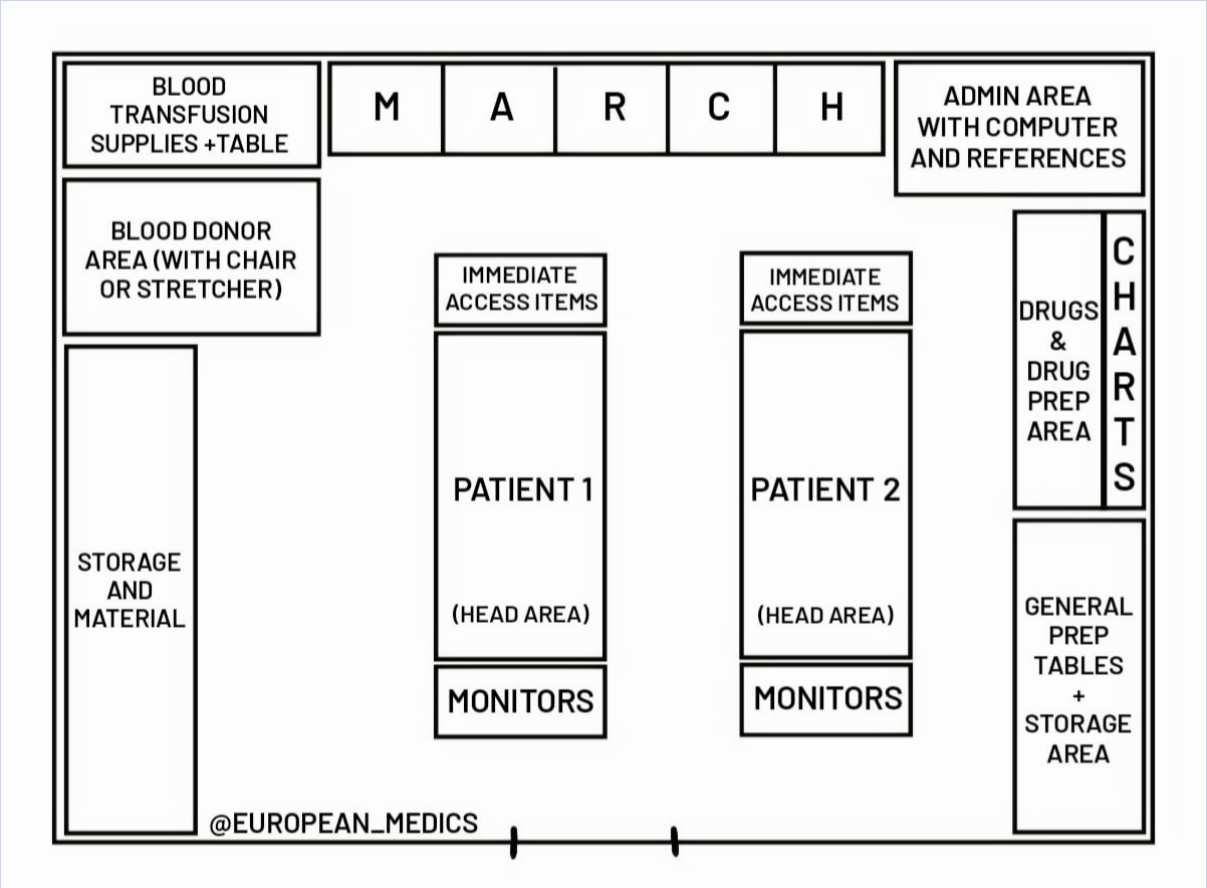

Figure 2: Floor Plan of a Resistance Underground Clinic

DESCRIPTION KEY:

M — Massive bleeding
(Contains items for bleeding control)

A — Airway management
(Contains items for definitive airway management including suctions, intubation equipment, surgical airway equipment etc.)

R — Respiration
(Contains items for treatment of thoracic trauma such as thoracotomy equipment)

C — Circulation
(Contains equipment for fluid resuscitation

H — Hypothermia
(Contains items such as blankets and active warming devices as well as equipment tools for management of TBI)

APPENDIX 3 - INDIVIDUAL FIRST AID KIT (IFAK) EQUIPMENT LIST

This is a recommended equipment list for an individual first aid kit (IFAK) that is supposed to be carried by every single individual participating directly in resistance operations. The recommendations are to be treated as a guideline only and adapted to the specific mission needs. Refer to Section: “Individual Gear” for detailed explanation of the dual-phase concept.

SELF AID SECTION:

This kit is designed to be carried in a small pouch on the front of the individual’s equipment. It contains items that are viable for self-application after critical injury.

- Tourniquet (can be carried separately) 1x
- Z-folded hemostatic gauze 2x
- Emergency bandage 1x
- Vented chest seal (pair) 2x
- Chemical light (for self-marking) 1x

BUDDY AID SECTION:

This kit is to be carried in a larger pouch on the casualties plate carrier or Load Bearing Equipment (LBE). Unit-specific personnel might want to expand the capabilities of this kit.

- Additional Tourniquet 1x
- Z-folded hemostatic gauze 2x
- Emergency bandage 1x
- Triangular bandage 1x
- Burn dressing 1x
- Nasopharyngeal airway (NPA) 1x
- Vented chest seals (pair) 2x
- Chest decompression needle 1x
- Mylar blanket 1x
- Active warming plaster 1x
- Rigid eye shield 2x
- Autoinjectors (if issued) 1x
- Combat Wound Medication Pack 1x
    - Acetaminophen 1000 mg PO
    - Meloxicam 15 mg PO
    - Moxifloxacin 400 mg PO
- TCCC patient card (Form DD1380) 1x
- Chemical Light (for marking) 1x
- Waterproof marker (fine tip) 1x
- Nitril Gloves, blue 1x

APPENDIX 4 - ADVANCED GUERILLA FIRST RESPONDER CAPABILITIES

This is a recommended skill list for providers at the Advanced Guerilla First Responder (AGFR) Level of capability. Further information can be accessed following the link:
https://docs.google.com/document/d/1x9QsEZe8Dq-UC4PKUYOvY-BWV5oV3GBLmqNAWqfAVTo/edit?usp=sharing

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Assessment:
Rapid Casualty Assessment
TCCC Trauma Casualty Assessment
Triage Casualties

Massive Bleeding:
Control Massive External Hemorrhage
Tourniquet Application
Wound Packing with Hemostatic Dressing
Apply Direct Pressure
Pressure Dressing Application after Hemostatic Dressing

Airway:
Airway Assessment and Treatment
Airway Positioning-Sit-up/Lean Forward
Chin-Lift/Jaw-Thrust Maneuver
Recovery Positioning of a Casualty
Bag-Valve-Mask Ventilation
Nasopharyngeal and Oropharyngeal Airway
Extraglottic Airway
Airway Suctioning

Respiration:
Assessment of Respirations
Treatment of Respiratory Dysfunction
Treatment of Sucking Chest Wound/Apply Vented Chest Seal Application
Needle Thoracocentesis
Chest Seal Tension Release Maneuver
Oxygen Administration

Circulation:
Assessment and Treatment of Bleeding
Pelvic Compression Device Application
Tourniquet Reassessment/Replacement
Tourniquet Conversion to other Adjuncts
Assess and Treat for Hemorrhagic Shock
Initiation of Ruggedized IV Saline Lock
Administration of IV Fluids (NS, LR, Hextend)
Collecting Fresh Whole Blood in the Field
Preparing a Fresh Whole Blood Transfusion

Head Injuries/TBI:
Identification of a Casualty with a Head Injury
Assessment and Treatment of Head Trauma
Assessment and Document of Mental Status using AVPU

Hypothermia:
Hypothermia Prevention
Use of Casualty Warming Devices

Eye Trauma:
Assessment of Penetrating Eye Trauma
Field Test of Visual Acuity
Rigid Eye Shield Application
Antibiotic Eye Drop Application

Medications:
Administration of CPP Medications
Acetaminophen (PO)
Administration of Oral Transmucosal Fentanyl Citrate as Lozenges (OTFC)
Administration of Ketamine (IV, IM, IN)
Administration of Morphine (IV or IM)
Administration of Naloxone (IV or IM)

Splinting:
Application of Triangular Bandage Splits
Application of Cervical Collar Splints
Application of Flexible Extremity Splints

Wound Care:
Assessment of Wounds
Irrigation with Dakin's Solution
Wet-to-Dry Dressing Application
Non-surgical Wound Closure Methods
Detection and Prevention of Wound Infections

Monitoring:
Assessment of Vital Signs (HR/RR/BP/BGL/Temp/Cap. refill)
Pulse Oximetry Monitoring in TCCC
Electronic Vital Signs Monitoring

APPENDIX 5 - ADVANCED GUERILLA FIRST RESPONDER EQUIPMENT

This is a recommended equipment list for providers at the Advanced Guerilla First Responder (AGFR) Level of capability (TCCC Tier 2).

Massive Bleeding
- Tourniquet
- Gauze
- Bandages
- iT Clamp
- Junctional TQ
- XStat 12

Airway
- Suction with Catheters
- OPA
- Supraglottic Airway
- Colorimetric Capnography Device

Respiration
- Pulsoximeter
- Stethoscope
- Chest seals (Occlusive Dressings)
- Chest Decompression Needles
- BVM with PEEP Valve and filter

Circulation
- Pelvic binder
- IV Access kit
- Sharps shuttle
- Fresh whole blood collection kit

Hypothermia
- Mylar blankets
- Reflective bivvy bag
- Active warming device
- Fluid warmer

Head Injuries
- Pupil light
- GCS Cheat sheet

Eyes
- Rigid Eye Shield
- Cobalt lens light
- Contrast solution
- Eye drops
- Antibiotic Eye drops
- Lens removal kit

Pain
- Combat pill pack
- Ketamine
- Nasal mistifier device
- Fentanyl Lozenge

Antibiotics
- Moxifloxacin (Tablets)

Wound Care
- Gauze 4x4 and 4x8
- Antiseptic solution
- Abdominal Wound Kit
- Wound Closure Equipment
- Minor Injuries Kit

Splinting
- SAM Splint
- Triangular Bandage
- Traction Splint

Burns
- Gauze
- Burn dressing

Administrative
- Documentation Equipment
- Personal Protective Equipment
- Reference Material

APPENDIX 6 - GUERILLA MEDIC EQUIPMENT RECOMMENDATIONS

This is a recommended equipment list for providers at the “Guerilla Medic” Level of capability (TCCC Tier 3). Changes should be made based on individual factors.

ACUTE CASUALTY CARE EQUIPMENT (MARCH + E-PAWS-B)

Massive Bleeding
- Tourniquet
- Gauze
- Bandages
- iT Clamp
- Junctional TQ
- XStat 12

Airway
- Suction with Catheters
- OPA
- Supraglottic Airway
- Surgical Cricothyroidotomy Kit
- Waveform Capnography Device

Respiration
- Pulsoximeter
- Stethoscope
- Chest seals (Occlusive Dressings)
- Chest Decompression Needles
- BVM with PEEP Valve and filter
- Thoracostomy kit

Circulation
- Pelvic binder
- IV Access kit
- IO Access kit
- Sharps shuttle
- 100 mL Saline bags
- Fresh whole blood transfusion kits
- Foley Catheter
- Calcium Injection
- Blood Pressure Cuff

Hypothermia
- Mylar blankets
- Reflective bivvy bag
- Active warming device
- Fluid warmer

Head Injuries
- Hypertonic saline solution
- Pupil light
- GCS Cheat sheet

Eyes
- Rigid Eye Shield
- Cobalt lens light
- Contrast solution
- Eye drops
- Lens removal kit

Pain
- Combat pill pack
- Ketamine
- Nasal mistifier device
- Versed
- Fentanyl
- Etomidate
- Other medications

Antibiotics
- Moxifloxacin
- Ertapenem (Invanz)

Wound Care
- Gauze 4x4 and 4x8
- Antiseptic solution
- Abdominal Wound Kit
- Wound Closure Equipment
- Minor Injuries Kit

Splinting
- SAM Splint
- Triangular Bandage
- Traction Splint

Burns
- Gauze
- Burn dressing

APPENDIX 6 - GUERILLA MEDIC EQUIPMENT RECOMMENDATIONS

(Continued).

PROLONGED CASUALTY CARE EQUIPMENT (RAVINES)

Resuscitate

- Blood Products
- Hypertonic Saline for TBI
- Fluids for burn resuscitation
- IV supplies and Dressings

Airway package

- Electrical Suction Device
- HME filters
- Tubeing care equipment
- Medications

Ventilator

- Thoracostomy equipment
- Heimlich's Valve
- Portable Ventilator
- Tubing with In line filter

Initiate Telemedicine

- Telemedicine cheat sheet
- Clinical partners reference list
- Method of transmitting HD pictures

Nursing Care

- Tooth brush, mouth wash
- Adult diapers or similar
- Foldable washing basin/bucket
- Clexane, Heparin, Compression wraps and/or thrombosis socks
- Urinary catheters or urine output measuring device
- Impermeable bed covers
- Nasogastric Tube
- Blankets and Padding material

Environment

- Sun screen
- Waby powder
- Water-based Lotion
- Chap stick
- Blankets, Hot bean bags pads
- Wet wipes, cold packs
- Mosquito netting

Advanced Field Surgical Procedures

- Automatic Vitals Monitor
- Scalpels
- Hemostats
- Retractors
- Metzenbaum Scissors
- Tissue forceps
- Gigli Saw
- Wound drains
- Vacuum pump
- Vacuum dressing equipment
- Chlorhexidine
- Iodine
- Sterile drapes
- Gowns, head cover, Surgical masks, Sterile gloves
- Scrub brushes, cleaning solution

Administrative

- TCCC Casualty Card (Form DD1380)
- Prolonged Field Care Casualty Card
- Reference Material
- Writing Material
- Watch with Timer
- Light Sources
- Shears and cutting utensils